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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,191	03/24/2005	Takahiro Horiguchi	268668US26PCT	4403
22850	7590	06/25/2007		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER DHINGRA, RAKESH KUMAR	
			ART UNIT 1763	PAPER NUMBER
			NOTIFICATION DATE 06/25/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/529,191	HORIGUCHI ET AL.	
	Examiner	Art Unit	
	Rakesh K. Dhingra	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/05, 08/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a) because Figures 2, 4, 6, 7, 9-14 fail to show essential details clearly due to smudging (for example, in Figure 9 - susceptor 118, quartz jar 112) as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention as explained hereunder.

Claim 1, line 7 recites limitation “a heater plate mounted on the top plate of the transparent case” which is indefinite since as per disclosure (Figure 21 and page 38, lines 22-27) heater 114 is provided within the internal space 113 of quartz bell jar 112 (transparent case), that is heater plate is provided within the transparent case, instead of on the top plate of transparent case, as recited in the claim. Therefore for the purpose of examination on merits this limitation has been interpreted as “a heater plate provided within the space of transparent case”.

Applicant is invited to clarify/amend the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Shinpei et al (JP 09-030893).

Regarding Claim 11: Shinpei et al teach a substrate processing apparatus (Figure 1) comprising:
a reactor 10 (processing vessel) that defines a processing space therein;
a transparent quartz hood 12 (transparent quartz case) including a cylindrical portion and a top plate portion for containing a heater portion that heats a substrate introduced into the processing space to a predetermined temperature;
a heater plate 14 provided within the space of the case 12; and
a susceptor 18 (holding member) for holding the substrate at a position spaced from and opposite to the heater plate 14 (paragraphs 0012, 0014, 0015, 0020).

Regarding Claim 12: Shinpei et al teach that apparatus can have a depressurizing part (through exhaust 17) that enables adjusting the pressure in the internal space of transparent case and in the processing vessel to be same (that is, equal pressure in the reactor vessel and transparent case at the same time) [paragraph 0013].

Regarding Claim 13: Shinpei et al teach a reflecting member 16 provided below the heater 14 for upwardly reflecting heat from the heating element (Figure 1 and paragraph 0012).

Regarding Claim 14: Shipei et al teach that reflector 16 (heat reflecting plate) is disposed below an insulating material 15, which in turn is located below heater plate 14, that is reflecting member is clamped in an opposing state to the heater 14 (paragraph 0012).

Regarding Claim 15: Shinpei et al teach the system is a low pressure CVD system wherein process gases are supplied through gas head 2 (gas injection part) for flow of gases into the processing chamber 10. Though Shinpei et al do not explicitly depict an evacuation port in the drawing for evacuating the gas passed through the substrate, the same would be implied (paragraphs 0011 -0013).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinpei et al (JP 09-030893) in view of Fayfield et al (US PG PUB No. 2001/0000098).

Regarding Claim 16: Shinpei et al teach all limitations of the claim except a UV source for irradiating UV rays to the processing space.

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Fayfield et al teach a substrate processing apparatus (Figure 12) comprising a reaction chamber 10 with a processing space that includes a wafer and a lamp house 14 as UV sources mounted externally (or can be mounted internally also) for heating or for photochemical reaction on the wafer in the processing space (paragraphs 0023-0032).

Therefore it would have been obvious to one of skills in the art at the time of the invention to provide an ultraviolet source for irradiating the processing space as taught by Fayfield et al in the apparatus of Shinpei et al to enable treating the wafer for heating or photo-chemical reaction as required as per process (paragraphs 0031).

Regarding Claim 17: Fayfield et al teach that apparatus comprises a UV controller 28 that enables UV source deliver desired amount of power at a UV heating level and the output control can be linked by a feedback system to the chamber temperature (that is area of the processing space to be irradiated by UV rays can be controlled with the help of UV controller 28 (paragraphs 0031, 0032)

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinpei et al (JP 09-030893) in view of Hattori (US Patent No. 5,164,012).

Regarding Claim 18: Shinpei et al teach all limitations of the claim except a support bridge portion extending across inside of cylindrical portion of transparent case.

Hattori teach a substrate processing apparatus (Figure 2) comprising a quartz reaction tube 35 (quartz case) whose cylindrical portion is supported by a table 23 (column 4, lines 10-35).

Therefore it would have been obvious to one of skills in the art at the time of the invention to provide a support bridge portion extending across inside of cylindrical portion of transparent case as taught by Hattori in the apparatus of Shinpei et al to enable support the cylindrical portion of transparent case.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

1) Murakami (US Patent No. 5,462,603) teach a substrate processing apparatus (Figures 1, 2) comprising a processing vessel 12, a case 13 made from quartz, the case including lower cylindrical portions 33, and an upper cylindrical portion 32 with a top plate for containing a heater portion, a heater plate 14 mounted near and underneath the top plate of the case 13 (column 3, line 60 to column 5, line 63).

2) Ichishima et al (US Patent No. 5,868,850) teach a substrate processing apparatus (Figure 1) comprising a reaction chamber 25, a supporting ring 28 (case) made from quartz, the case including a cylindrical portions, and an upper cylindrical portion 32 and covered with a wafer supporter 32 (like a top plate) for containing a heater portion, a heater plate 16 mounted near and underneath the top plate of the case and a wafer supporter 32 (holding member) for holding the substrate W at a position spaced from and opposite to the heater plate 14 (column 3, line 60 to column 5, line 63).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rakesh K. Dhingra whose telephone number is (571)-272-5959. The examiner can normally be reached on 8:30 -6:00 (Monday - Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571)-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Rakesh Dhingra



Parviz Hassanzadeh
Supervisory Patent Examiner
Art Unit 1763